

CONTENTS OF VOLUME 52

- No. 1 (pp 1-134) published July 1999
 No. 2 (pp 135-288) published August 1999
 No. 3 (pp 289-454) published September 1999
 No. 4 (pp 455-616) published October 1999
 No. 5 (pp 617-740) published November 1999
 No. 6 (pp 741-870) published December 1999

- Aikawa M, Lopes-Shikida SAR, Lemos MF, Pradella JGC, Padilla G: Screening of spontaneous and induced mutants in *Streptomyces avermitilis* enhances avermectin production 558
- Akimoto C, Aoyagi H, Tanaka H: Endogenous elicitor-like effects of alginate on physiological activities of plant cells 429
- Ascón MA, Lebeault J-M: High efficiency of a coupled aerobic-anaerobic recycling biofilm reactor system in the degradation of recalcitrant chloroaromatic xenobiotic compounds 592
- Ashkenazy R, Yannai S, Rahman R, Rabinovitz E, Gottlieb L: Fixation of spent *Saccharomyces cerevisiae* biomass for lead sorption 608
- Bae CS, Yang DS, Lee J, Park Y-H: Improved process for production of recombinant yeast-derived monomeric human G-CSF 338
- Baumgarten E, Nagel M, Tischner R: Reduction of the nitrogen and carbon content in swine waste with algae and bacteria 281
- Biebl H, Menzel K, Zeng A-P, Deckwer W-D: Microbial production of 1,3-propanediol 289
- Billingsley KA, Backus SM, Ward OP: Effect of surfactant solubilization on biodegradation of polychlorinated biphenyl congeners by *Pseudomonas* LB400 255
- Burger C, Carrondo MJT, Cruz H, Cuffe M, Dias E, Griffiths JB, Hayes K, Hauser H, Looby D, Mielke C, Moreira J-L, Rieke E, Savage AV, Stacey GN, Welge T: An integrated strategy for the process development of a recombinant antibody-cytokine fusion protein expressed in BHK cells 345
- Caldeira M, Heald SC, Carvalho MF, Vasconcelos I, Bull AT, Castro PML: 4-Chlorophenol degradation by a bacterial consortium: development of a granular activated carbon biofilm reactor 722
- Cassland P, Jönsson LJ: Characterization of a gene encoding *Trametes versicolor* laccase A and improved heterologous expression in *Saccharomyces cerevisiae* by decreased cultivation temperature 393
- Catcheside DEA, Ralph JP: Biological processing of coal 16
- Cazemier AE, Verdoes JC, Op den Camp HJM, Hackstein JHP, van Ooyen AJJ: A β -1,4-endoglucanase-encoding gene from *Cellulomonas pachnodae* 232
- Chauhan S, Yankelevich E, Bystritskii VM, Wood TK: Degradation of 2,4,5-trichlorophenol and 2,3,5,6-tetrachlorophenol by combining pulse electric discharge with bioremediation 261
- Chen C-K, Blaschek HP: Acetate enhances solvent production and prevents degeneration in *Clostridium beijerinckii* BA101 170
- Chen T-Y, Shang H-F, Chen T-L, Lin C-P, Hui C-F, Hwang J: Recombinant protein composed of *Pseudomonas* exotoxin A, outer membrane proteins I and F as vaccine against *P. aeruginosa* infection 524
- Chen X, Romaine CP, Ospina-Giraldo MD, Royse DJ: A polymerase chain reaction-based test for the identification of *Trichoderma harzianum* biotypes 2 and 4, responsible for the worldwide green mold epidemic in cultivated *Agaricus bisporus* 246
- Classen PAM, van Lier JB, Lopez Contreras AM, van Niel EWJ, Sijtsma L, Stams AJM, de Vries SS, Weusthuis RA: Utilisation of biomass for the supply of energy carriers 741
- Collins LD, Daugulis AJ: Benzene/toluene/p-xylene degradation. Part I. Solvent selection and toluene degradation in a two-phase partitioning bioreactor 354
- Collins LD, Daugulis AJ: Benzene/toluene/p-xylene degradation. Part II. Effect of substrate interactions and feeding strategies in toluene/benzene and toluene/p-xylene fermentations in a partitioning bioreactor 360
- Cybinski DH, Layton I, Lowry JB, Dalrymple BP: An acetylxy-lan esterase and a xylanase expressed from genes cloned from the ruminal fungus *Neocallimastix patriciarum* act synergistically to degrade acetylated xylans 221
- Demain AL: Pharmaceutically active secondary metabolites of microorganisms 455
- Dermlin W, Prasertsan P, Doelle H: Screening and characterization of bioflocculant produced by isolated *Klebsiella* sp. 698
- Dicko MH, Searle-van Leeuwen MJF, Beldman G, Ouedraogo OG, Hilhorst R, Traoré AS: Purification and characterization of β -amylase from *Curculigo pilosa* (Short contribution) 802
- Diez B, Mellado E, Rodríguez M, Bernasconi E, Barredo JL: The NADP-dependent glutamate dehydrogenase gene from *Penicillium chrysogenum* and the construction of expression vectors for filamentous fungi 196
- Dilek FB, Taplamacioglu HM, Tarlan E: Colour and AOX removal from pulping effluents by algae 585
- Durand R, Rascle C, Fèvre M: Expression of a catalytic domain of a *Neocallimastix frontalis* endoxylanase gene (*xyn3*) in *Kluyveromyces lactis* and *Penicillium roqueforti* 208
- Egging L, Sahn H: L-Glutamate and L-lysine: traditional products with impetuous developments 146
- Eneyskaya EV, Kulminkaya AA, Savel'ev AN, Savel'eva NV, Shabalin KA, Neustroev KN: Acid protease from *Trichoderma reesei*: limited proteolysis of fungal carbohydrases 226
- Escalante L, Ramos I, Imriskova I, Langley E, Sanchez S: Glucose repression of anthracycline formation in *Streptomyces peucetius* var. *caesius* 572
- Fakoussa RM, Frost PJ: In vivo-decolorization of coal-derived humic acids by laccase-excreting fungus *Trametes versicolor* 60
- Fakoussa RM, Hofrichter M: Biotechnology and microbiology of coal degradation 25
- Farooqi M, Sosnita P, Saleemuddin M, Ulber R, Scheper T: Immunoaffinity layering of enzymes, Stabilization and use in flow injection analysis of glucose and hydrogen peroxide 373
- Fernández M-J, Adrio JL, Piret JM, Wolfe S, Ro S, Demain AL: Stimulatory effect of growth in the presence of alcohols on biotransformation of penicillin G into cephalosporin-type antibiotics by resting cells of *Streptomyces clavuligerus* NP1 484
- Ferreira Jorge RM, Livingston AG: A novel method for characterisation of microbial growth kinetics on volatile organic compounds 174
- Füchtenbusch B, Steinbüchel A: Biosynthesis of polyhydroxyalkanoates from low-rank coal liquefaction products by *Pseudomonas oleovorans* and *Rhodococcus ruber* 91

- Gavagan JE, DiCosimo R, Eisenberg A, Fager SK, Folsom PW, Hann EC, Schneider KJ, Fallon RD: A Gram-negative bacterium producing a heat-stable nitrilase highly active on aliphatic dinitriles 654
- Götz GKE, Fakoussa RM: Fungal biosolubilization of Rhenish brown coal monitored by Curie-point pyrolysis/gas chromatography/mass spectrometry using tetraethylammonium hydroxide 41
- Gómez F, Amils R, Marín I: Bioremoval of organic and inorganic sulphur from coal samples (Short contribution) 118
- Guieysse B, Mattiasson B: Fast remediation of coal-tar-related compounds in biofilm bioreactors 600
- Guo X-X, Shi D-J, Xu X-D, Ouyang Y-X, Ru B-G: Metal-induced expressing of mammal Metallothionein-I gene in cyanobacteria to promote cadmium-binding preferences (Short contribution) 806
- Hage A, Schoemaker HE, Field JA: Reduction of aryl acids by white-rot fungi for the biocatalytic production of aryl aldehydes and alcohols 834
- Hölker U, Ludwig S, Scheel T, Höfer M: Mechanisms of coal solubilization by the deuteromycetes *Trichoderma atroviride* and *Fusarium oxysporum* 57
- Hofrichter M, Ziegenhagen D, Sorge S, Ullrich R, Bublit F, Fritsche W: Degradation of lignite (low-rank coal) by lignolytic basidiomycetes and their manganese peroxidase system 78
- Hofvendahl K, Åkerberg C, Zacchi G, Hahn-Hägerdal B: Simultaneous enzymatic wheat starch saccharification and fermentation to lactic acid by *Lactococcus lactis* 163
- Jayaraman A, Hallock PJ, Carson RM, Lee C-C, Mansfeld FB, Wood TK: Inhibiting sulfate-reducing bacteria in biofilms on steel with antimicrobial peptides generated in situ 267
- Jayaraman A, Ornek D, Duarte DA, Lee C-C, Mansfeld FB, Wood TK: Axenic aerobic biofilms inhibit corrosion of copper and aluminum 787
- Juteau P, Larocque R, Rho D, LeDuy A: Analysis of the relative abundance of different types of bacteria capable of toluene degradation in a compost biofilter 863
- Kacena MA, Smith EE, Todd P: Autolysis of *Escherichia coli* and *Bacillus subtilis* cells in low gravity (Short contribution) 437
- Kalscheuer R, Arenskötter M, Steinbüchel A: Establishment of a gene transfer system for *Rhodococcus opacus* PD630 based on electroporation and its application for recombinant biosynthesis of poly(3-hydroxyalkanoic acids) 508
- Kastner JR, Jones WJ, Roberts RS: Oxygen starvation induces cell death in *Candida shehatae* fermentations of D-xylose, but not D-glucose (Erratum) 612
- Katsivela E, Bonse D, Krüger A, Strömpl C, Livingston A, Wittich R-M: An extractive membrane biofilm reactor for degradation of 1,3-dichloropropene in industrial waste water 853
- Kempken F: Fungal transposons: from mobile elements towards molecular tools 756
- Khashnobish A, Hamann A, Osiewacz HD: Modulation of gene expression by (CA)_n microsatellites in the filamentous ascomycete *Podospora anserina* 191
- Kim D-S, Fogler HS: The effects of exopolymers on cell morphology and culturability of *Leuconostoc mesenteroides* during starvation 839
- Kim H-S, Yoon B-D, Choung D-H, Oh H-M, Katsuragi T, Tani Y: Characterization of a biosurfactant, mannosylerythritol lipid-produced from *Candida* sp. SY16 713
- Kiran KR, Karanth NG, Divakar S: Preparation of stearoyl lactic acid ester catalyzed by lipases from *Rhizomucor miehei* and porcine pancreas optimization using response surface methodology 579
- Kirimura K, Yusa S, Rugsaseel S, Nakagawa H, Osumi M, Usami S: Amylose-like polysaccharide accumulation and hyphal cell-surface structure in relation to citric acid production by *Aspergillus niger* in shake culture 421
- Klein J: Biological processing of fossil fuels, Résumé of the Bio-conversion Session of ICCS'97 2
- Klein J: Preface 1
- Koops BC, Papadimou E, Verheij HM, Slotboom AJ, Egmond MR: Activity and stability of chemically modified *Candida antarctica* lipase B adsorbed on solid supports 791
- Krüger K, Lang G, Weidner T, Engel AM: Cloning and functional expression of the D-β-hydroxybutyrate dehydrogenase gene of *Rhodobacter* sp. DSMZ 12077 (Short contribution) 666
- Laborda F, Monistrol IF, Luna N, Fernández M: Processes of liquefaction/solubilization of Spanish coals by microorganisms 49
- Lee B-S, Maurer T, Kalbitzer HR, Holler E: β-Poly(L-malate) production by *Physarum polycephalum*, ¹³C Nuclear magnetic resonance studies 415
- Lepistö R, Rintala J: Kinetics and characteristics of 70°C, VFA-grown, UASB granular sludge 730
- Lessard PA, O'Brien XM, Ahlgren NA, Ribich SA, Sinskey AJ: Characterization of IS1676 from *Rhodococcus erythropolis* SQ1 811
- Liu Y, Chen GH, Rols JL: A kinetic model incorporating energy spilling for substrate removal in substrate-sufficient batch culture of activated sludge 647
- Lodato P, Segovia de Huerogo M, Buera MP: Viability and thermal stability of a strain of *Saccharomyces cerevisiae* freeze-dried in different sugar and polymer matrices 215
- Malaise WJ, Olivares E, Belcourt A, Nilsson K: Immobilization of pancreatic islet cells with preserved secretory potential (Short contribution) 652
- Monchois V, Vignon M, Russell RRB: Isolation of key amino acid residues at the N-terminal end of the core region *Streptococcus downei* glucanucrase, GTF-I 660
- Montiel MD, Rodríguez J, Pérez-Leblic MI, Hernández M, Arias ME, Copa-Patiño JL: Screening of mannanases in actinomycetes and their potential application in the biobleaching of pine kraft pulps 240
- Mukherjee J, Lindemann C, Scheper T: Fluorescence monitoring during cultivation of *Enterobacter aerogenes* at different oxygen levels 489
- Munder T, Hinnen A: Yeast cells as tools for target-oriented screening 311
- Nakamori S, Kobayashi S, Nishimura T, Takagi H: Mechanism of L-methionine overproduction by *Escherichia coli*: the replacement of Ser-54 by Asn in the MetJ protein causes the derepression of L-methionine biosynthetic enzymes 179
- Nandakumar MP, Sapre A, Lali A, Mattiasson B: Monitoring of low concentrations of glucose in fermentation broth 502
- Ogawa J, Ryono A, Xie S-X, Vohra RM, Indrati R, Miyakawa H, Ueno T, Ikenaka Y, Nanba H, Takahashi S, Shimizu S: β-Carbon stereoselectivity of N-carbamoyl-D-α-amino acid amidohydrolase for α,β-diastereomeric amino acids 797
- Ott R, Krämer R: DNA hydrolysis by inorganic catalysts 761
- Otto RT, Daniel H-J, Pekin G, Müller-Decker K, Fürstenberger G, Reuss M, Syltatk C: Production of sophorolipids from whey. II. Product composition, surface active properties, cytotoxicity and stability against hydrolases by enzymatic treatment 495
- Overhage J, Priefert H, Rabenhorst J, Steinbüchel A: Biotransformation of eugenol to vanillin by a mutant of *Pseudomonas* sp. strain HR199 constructed by disruption of the vanillin dehydrogenase (*vdh*) gene 820
- Parente E, Ricciardi A: Production, recovery and purification of bacteriocins from lactic acid bacteria 628
- Parshikov IA, Freeman JP, Williams AJ, Moody JD, Sutherland JB: Biotransformation of N-acetylphenothiazine by fungi 553
- Payot S, Guedon E, Desvaux M, Gelhaye E, Petitdemange E: Effect of dilution rate, cellobiose and ammonium availabilities on *Clostridium cellulolyticum* sporulation 670

- Pencreac'h G, Baratti JC: Properties of free and immobilised lipase from *Burkholderia cepacia* in organic media 276
- Peres CM, Van Aken B, Naveau H, Agathos SN: Continuous degradation of mixtures of 4-nitrobenzoate and 4-aminobenzoate by immobilized cells of *Burkholderia cepacia* strain PB4 440
- Potekhina JS, Sherisheva NG, Povetkina LP, Pospelov AP, Raki-tina TA, Warnecke F, Gottschalk G: Role of microorganisms in corrosion inhibition of metals in aquatic habitats 639
- Ralph JP, Catcheside DEA: Transformation of macromolecules from a brown coal by lignin peroxidase 70
- Roseiro JC, Partidário PJ, Lobo N, Marçal MJ: Physiology and kinetics of trimethylamine conversion by two methylotrophic strains in continuous cultivation systems 546
- Rosenberg E, Ron EZ: High- and low-molecular-mass microbial surfactants 154
- Ruff J, Hitzler T, Rein U, Ritter A, Cook AM: Bioavailability of water-polluting sulfonaromatic compounds (Short contribution) 446
- Sabaté J, Grifoll M, Viñas M, Solanas AM: Isolation and characterization of a 2-methylphenanthrene utilizing bacterium: identification of ring cleavage metabolites 704
- Sabra W, Zeng A-P, Sabry S, Omar S, Deckwer W-D: Effect of phosphate and oxygen concentrations on alginate production and stoichiometry of metabolism of *Azotobacter vinelandii* under microaerobic conditions 773
- Saha BC, Bothast RJ: Production of 2,3-butanediol by newly isolated *Enterobacter cloacae* 321
- Sakuma Y, Kimura M, Takabatake T, Takeshima K, Fujimura H: Expression and secretion of a biologically active mouse sonic hedgehog protein by the methylotrophic yeast *Pichia pastoris* 410
- Sarnaik S, Kanekar P: Biodegradation of methyl violet by *Pseudomonas mendocina* MCM B-402 251
- Schacht S, Sinder C, Pfeifer F, Klein J: Bioassays for risk assessment of coal conversion products (Short contribution) 127
- Scheel T, Hölker U, Ludwig S, Höfer M: Evidence for and expression of a laccase gene in three basidiomycetes degrading humic acids 66
- Schippers A, Rhowerder T, Sand W: Intermediary sulfur compounds in pyrite oxidation: implications for bioleaching and biodepyritization of coal 104
- Schüler D, Frankel RB: Bacterial magnetosomes: microbiology, biomineralization and biotechnological applications 464
- Schumacher JD, Fakoussa RM: Degradation of alicyclic molecules by *Rhodococcus ruber* CD4 85
- Sedlaczek L, Lisowska K, Korycka M, Rumijowska A, Ziolkowski A, Długoński J: The effect of cell wall components on glycine-enhanced sterol side chain degradation to androstene derivatives by mycobacteria 563
- Serbolisca L, de Ferra F, Margarit I: Manipulation of the DNA coding for the desulphurizing activity in a new isolate of *Arthrobacter* sp. (Short contribution) 122
- Sethuraman A, Akin DE, Eriksson K-EL: Production of ligninolytic enzymes and synthetic lignin mineralization by the bird's nest fungus *Cyathus stercoreus* 689
- Setti L, Farinelli P, Di Martino S, Frassinetti S, Lanzarini G, Piferi PG: Developments in destructive and non-destructive pathways for selective desulfurizations in oil-biorefining processes 111
- Sharma HSS, Furlan A, Lyons G: Comparative assessment of chelated spent mushroom substrates as casing material for the production of *Agaricus bisporus* 366
- Shumkov S, Terekhova S, Laurinavichius K: Effect of enclosing rocks and aeration on methanogenesis from coals 99
- Souza MC de O, Roberto IC, Milagres AMF: Solid-state fermentation for xylanase production by *Thermoascus aurantiacus* using response surface methodology 768
- Stoop JMH, Mooibroek H: Advances in genetic analysis and biotechnology of the cultivated button mushroom, *Agaricus bisporus* 474
- Stredansky M, Conti E: Succinoglycan production by solid-state fermentation with *Agrobacterium tumefaciens* 332
- Takahashi S, Ueda M, Tanaka A: Independent production of two molecular forms of a recombinant *Rhizopus oryzae* lipase by KEX2-engineered strains of *Saccharomyces cerevisiae* 534
- Terashima M, Murai Y, Kawamura M, Nakanishi S, Stoltz T, Chen L, Drohan W, Rodriguez RL, Katoh S: Production of functional human α_1 -antitrypsin by plant cell culture 516
- Tran L-SP, Szabó L, Ponyi T, Orosz L, Sík T, Holczinger A: Phage abortive infection of *Bacillus licheniformis* ATCC 9800; identification of the *abiBL11* gene and localisation and sequencing of its promoter region 845
- Tudzyński B: Biosynthesis of gibberellins in *Gibberella fujikuroi*: biomolecular aspects 298
- van der Rest ME, Lange C, Molenaar D: A heat shock following electroporation induces highly efficient transformation of *Corynebacterium glutamicum* with xenogeneic plasmid DNA 541
- van der Werf MJ, Orru RVA, Overkamp KM, Swarts HJ, Osprey I, Steinreiber A, de Bont JAM, Faber K: Substrate specificity and stereospecificity of limonene-1,2-epoxide hydrolase from *Rhodococcus erythropolis* DCL14: an enzyme showing sequential and enantioconvergent substrate conversion 380
- Van Laere KMJ, Hartemink R, Beldman G, Pitson S, Dijkema C, Schols HA, Voragen AGJ: Transglycosidase activity of *Bifidobacterium adolescentis* DSM 20083 α -galactosidase 681
- van Niel EWJ, Hahn-Hägerdal B: Nutrient requirements of lactococci in defined growth media 617
- van Zyl WH, Eliasson A, Hobley T, Hahn-Hägerdal B: Xylose utilisation by recombinant strains of *Saccharomyces cerevisiae* on different carbon sources (Short contribution) 829
- Wainø M, Ingvorsen K: Production of halostable β -mannanase and β -mannosidase by strain NN, a new extremely halotolerant bacterium 675
- Wang J-C, Sakakibara M, Liu J-Q, Dairi T, Itoh N: Cloning, sequence analysis, and expression in *Escherichia coli* of the gene encoding phenylacetaldehyde reductase from styrene-assimilating *Corynebacterium* sp. strain ST-10 386
- Więckowski AB, Slowik GP, Gąsiorek JA, Gąsiorek P, Domka F, Perkowska A: EPR study and structural aspects of ferredoxins obtained from *Thiobacillus ferrooxidans* 96
- Wilke D: Chemicals from biotechnology: molecular plant genetics will challenge the chemical and the fermentation industry 135
- Wu S, Fallon RD, Payne MS: Engineering *Pichia pastoris* for stereoselective nitrile hydrolysis by co-producing three heterologous proteins 186
- Xie S-X, Ogawa J, Shimizu S: Production of (R)-3-pentyn-2-ol through stereoinversion of racemic 3-pentyn-2-ol by *Nocardia fusca* AKU 2123 327
- Yamazaki H, Ohnishi Y, Takeuchi K, Mori N, Shiraishi N, Sakata Y, Suzuki H, Horinouchi S: Genetic transformation of a *Rhizomucor pusillus* mutant defective in asparagine-linked glycosylation: production of a milk-clotting enzyme in a less-glycosylated form 401
- Zhang K, Kurano N, Miyachi S: Outdoor culture of a cyanobacterium with a vertical flat-plate photobioreactor: effects on productivity of the reactor orientation, distance setting between the plates, and culture temperature 781